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CURRENT LITERATURE

NOTES FOR STUDENTS

Ecological classification.—In a moderate discussion of the classification of vegetation, TANSLEY[1] has clarified some obscure points and made several good suggestions. He insists that it is absolutely necessary to consider the units of vegetation as they actually occur in nature, and not to attempt to classify vegetation either by life forms or habitats. The natural units of vegetation to be employed in any system of classification in the first instance must be determined empirically. These units are essentially topographical units, and are to be grouped according to development. While differing in many ways from true organisms, they may most conveniently and most correctly be regarded as quasi-organisms. In this respect the author takes what appears to be a safe stand midway between such extreme views as those of CLEMENTS, who regards vegetational units as true organisms, and those of GLEASON, who refuses to consider a unit of vegetation as an organic entity. The plant "association" is regarded as the primary and fundamental unit of vegetation. In this TANSLEY is in agreement with a majority of ecological investigators, although he lays great stress upon the limitation of the term to mature units in relatively stable equilibrium with their environment. Transitory plant communities are differentiated from fully developed ones, and are termed "associes." For parts of associations and associes dominated by a single species, it is suggested that CLEMENT'S usage be followed by designating them respectively "consociations" and "consocies."

The continued use of "formation" is recommended. The formation must be determined empirically, and it consists of a set of plant communities related developmentally and culminating in one or more associations. It is regarded as possible to distinguish climatic and physiographic (edaphic) formations, although not so sharply as has been done by NICHOLS, because of the frequent replacement of climatic by physiographic factors which is gradual in the transition region between two climatic regions. It is recommended that plant associations be named by their dominant species, and the formations, whenever it is possible to do so, from the form of the vegetation.—GEO. D. FULLER.

Anatomy of Equisetum.—Several recent papers help considerably to settle the controversy over the fundamental nature of the bundles and the stele in *Equisetum*. MEYER[2] presents a detailed review of the vascular anatomy of one species, paying particular attention to the node. Miss BARRATT[3] treats several species in a thorough manner, especially the anatomy of sporelings. Lady ISABEL BROWN[4] is continuing her painstaking studies of the anatomy of the cone, adding two more species to those now known in detail. She has also[5] given her attention more fully to the broader aspect of the comparative morphology. These students of *Equisetum* all present convincing evidence of great reduction in the vascular tissues. All are of the opinion that the internodal ring of vascular bundles represents a more extensive and continuous mass in ancestral forms, and believe the three separated xylem strands of each bundle to be the remains of one continuous strand, except that Miss BARRATT considers the protoxylem is always an independent strand. The phylogenetic unity of the individual bundle in *Equisetum* seems well established. Leaf gaps do not exist; the gaps in the cone stele have no morphological value. Nodes and internodes do not exist in the cone, and the sporangiophores are organs *sui generis*. No true secondary growth occurs at the nodal ring.—I. W. BAILEY.

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[1] TANSLEY, A. G., The classification of vegetation and the concept of development. Jour. Ecol. **8**: 118–149. 1920.

[2] MEYER, F. J., Das Leitungssystem von *Equisetum arvense*. Jahrb. Wiss. Bot. **59**: 263–286. *figs. 7*. 1920.

Ecology.—Although one of the youngest members in the group of biological sciences, ecology in America has already passed two conspicuous milestones of progress. The first was the establishment in 1915 of the Ecological Society of America, which now has a membership of over 350, and usually supplements its annual meeting in December with a summer gathering upon the Pacific Coast. The appearance during 1920 of the four numbers constituting the first volume of a journal[6] devoted entirely to the interest of ecologists marks the passing of the second milestone.

The purpose of the new journal is well expressed in the "foreword" contained in the first number: "This journal is issued to meet the demand for the collective publication of articles on ecology. Its pages are open to all who have material of ecological interest from whatever field of biology. While the variety of fields may cause diversity of treatment, yet the ecological significance of the papers will make them of general interest. Specialization is inevitable, but makes more urgent the need for cooperation. To approach different subjects from similar points of view is to lay the foundation of cooperation." An examination of the first volume shows that all phases of the subject are being cared for. This is evidenced by the inclusion of 10 articles dealing with the more general aspects or including a discussion of both plants and animals, while an equal number deal rather exclusively with plants and six

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[3] BARRATT, KATE, A contribution to our knowledge of the vascular system of the genus *Equisetum*. Ann. Botany **34**: 173–200. *pls. 6, 7. figs. 24.* 1920.

[4] BROWN, ISABEL M. P., A third contribution to our knowledge of the anatomy of the cone and fertile stem of *Equisetum*. Ann. Botany **34**: 237–263. *pls. 8, 9. figs. 7.* 1920.

[5] ———, Phylogenetic considerations on the internodal vascular strands of *Equisetum*. New Phytol. **19**: 11–25. *figs. 7.* 1920.

[6] Ecology (continuing the Plant World). Quarterly Journal. BARRINGTON MOORE, editor; Brooklyn Botanic Garden, publisher. **1**: pp. 313. 1920.